TEACHERS COLLEGE RECORD

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# HIGH SCHOOL LESSONS

## INTRODUCTION

The accompanying stenographic lesson reports have been chosen from a considerable number made during a series of observations conducted by the Department of Secondary Education, in the Horace Mann, Ethical Culture, Wadleigh, and Washington Irving High Schools in New York City. In this series of experiments it has been a very difficult matter to secure accurate reports even under the best of conditions, due in part to our inability to secure reporters with sufficiently varied stenographic vocabularies to meet as promptly as they must the technical expressions used. Even some of our most expert reporters have been put to rout when called upon to use such terms as *simultaneous linear equation, abscissa, ordinate, x-axis* in one hour, and *Praxiteles, Thucydides, Phidias, Xenophon* in the next. This difficulty is further augmented by the fact of the almost universal custom of high-school pupils to speak indistinctly, to pronounce words carelessly, or to trail off their sentences into nothingness.

The lessons published are in every real sense "as is" lessons although the teacher knew in each instance that the stenographers were to be present. This arrangement was made with the teachers to avoid the needless expenditure of time and money in trying to report lessons that by their nature could not be reported with any degree of accuracy, such for example as lessons

involving considerable blackboard, map, or note-book work. Furthermore, we wished the teachers to give representative lessons, having no desire to snapshot them at less fortunate hours.

At best the conditions under which teachers and pupils appear in all such lessons cannot be considered normal. The mere presence of stenographers with the knowledge that they are perpetuating in cold type every sound that is made, is sufficient in itself to destroy utterly the natural relations of a good classroom. It is indeed an evidence of loyalty to the profession and of sympathetic appreciation of the needs of the profession that teachers have responded so generously in these experiments and submitted so willingly to a confessedly trying ordeal.

No black-and-white lesson can ever reproduce the personal relations existing between teacher and pupils. Manner, voice, sympathy—in fact, all the qualifications that contribute to the inspirational side of teaching—are left out: the stenographic lesson reflects only the purely intellectual reactions of the moment.

With all these limitations, however, the stenographic report has distinct uses. Shorn thus of all embellishments it is of importance to the student to see what the lesson offers in intellectual and educational substance. It is this residue that furnishes him with material for study. It not infrequently happens that groups of students come from a class observation completely dominated by the personality of the teacher, in some instances where there is in reality little to commend except a charming and dramatic manner on the part of the teacher. The stenographic lesson report soon reveals the actual strength or weakness in the content of the lesson and in the psychology of its presentation. It gives the *facts* of the lesson for analysis and study, and for repeated analysis and study as the student grows in the power to observe; whereas from the general observation he has only *impressions* to work upon, impressions that are easily obscured or effaced. With the manuscript as a basis, or point of departure, it is also possible to do constructive work on content, plan, questioning, application, etc.

The lessons are here published without criticism or comment. They are used for detailed study by students in the department

before they go out to observations of new lessons in order that certain habits of observation may be formed, thereby saving to the teachers some of the time and energy spent in class observation.

Each lesson is prefaced with a brief editorial by the teacher, showing the setting of the lesson in a series, with a few additional facts necessary to an intelligent reading of the lesson.

ROMIETT STEVENS.

# MATHEMATICS LESSON

## Second Year in Five-Year Course

### A First Lesson on the Graphic Method of Solving Simultaneous Linear Equations

*Introductory Note*

The following lesson was given to a class of twenty-two pupils (boys and girls together) in a period of forty minutes. Previous to this lesson the class had studied algebra eleven months, five times a week, and had covered the subject through quadratic equations. As they had never taken up graphic solutions, this was the first of a series of six lessons on that topic, which included the plotting of quadratic and cubic functions of one variable as well as simultaneous linear equations.

Graphic work is taken up at this point for the following reasons:

(1) As an introduction to graphic work, in general, and to connect algebra with some of the graphs one may meet in everyday life.

(2) To clear up the notion of a *function.*

(3) To explain why a simple equation is called *linear.*

(4) To show that a pair of simultaneous linear equations have, in general, only one solution.

(5) To explain why certain sets of simultaneous linear equations have peculiar solutions.

(6) To show that a quadratic equation has two roots, a cubic three roots, etc.

(7) To show that imaginary roots enter in pairs.

In another semester the subject is again taken up in connection with simultaneous quadratic equations, where it clears up very

easily the question of the number of solutions to be expected from a given set of equations, and shows why, in certain cases, we have a less number of solutions due to the presence of equal or infinite roots. The subject is one in which the pupils are always interested, and repays the teacher well for the time spent upon it.

. . . . . .

TEACHER: You have studied various kinds of simple equations. First, you had those involving one unknown quantity, such as $2x + 3 = 7$. Then you studied those with two unknown quantities, such as $x + y = 5$, and $x - y = 3$. All the time you had these equations, you solved them by algebraic methods, using axioms and finding certain values of x and y which would satisfy both. But we have a more interesting and attractive way of working equations of this kind; it makes the equation appeal to our eye in a very real way; in other words, we are going to take a picture of such an equation, and find its solution by that means, and when we get this photograph it is going to be about the same thing to us for the equation that an illustration would be for a story that we might read. You have seen this kind of thing very often,—the method used to photograph these equations,—sometimes in the newspapers, and as soon as we bring it out, you will recognize it.

Suppose we were interested in following the way the temperature varies out of doors, how it varies from hour to hour. We might say that at this moment, at one o'clock, the temperature is 30°, and that it will change to 40°, say, at two o'clock, to 35° at three o'clock, remain at 35° at four, drop to 30° at five, 25° at six, and so on. We know the temperature has gone up, we know it has gone down, but we can state that in the form of a picture so it will appeal to us much more, so we will see a little better that the temperature rises quickly between one and two o'clock, not so much between two and three o'clock, remains the same at four, drops gradually between four and five, etc.

And it all depends upon a very simple little thing, just a scheme by which we can make a single point represent two things at the same time.

[Before the lesson commenced, the teacher had marked on the blackboard a number of sets of small squares to represent cross-section paper. The teacher now points to one of these sets.]

I will show you how we might go about this. We might take this line here (*Points to line* OX, *Fig.* I) and call it the hour line, and precisely twelve o'clock I would mark here (*Points to* O *in Fig.* I *and writes* 12), here one o'clock, here two, here three, four, five, six. (*Teacher writes these numbers in Fig.* I.)

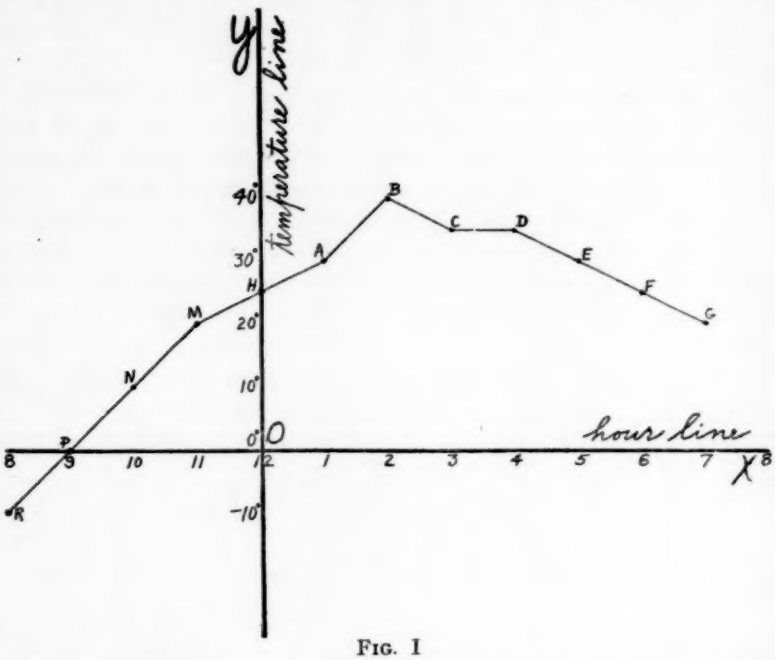


FIG. I

Suppose we wish to represent half past twelve, that would be half way between twelve and one, here, on the hour line. This line (*Points to* OY) I will call the temperature line, and I will mark degrees on it. I start with 10°, 20°, 30°, 40°, 50°, and so on. (*Writes these numbers on* OY.) And now the question arises, how, on a diagram like this, drawn off into squares, can we tell that the quantity which we call the temperature is 30° at one o'clock? I run along this line until I come to 30° (*Runs chalk along line* OY *from* O *until he reaches* 30°), then I move

my chalk to the right until it is directly over 1 on the hour line. I will put a point there (*Places point* A); that point tells us two things, that it is 30° and that it is one o'clock; 40° at two o'clock, I will put that down in a similar way (*Places point* B). At three o'clock it is going to be 35°, but I have no 35° here. How would you represent that, Miss Carman?

MISS C: Halfway between. (*Teacher places point* C.)

TEACHER: At four o'clock you will come again to 35°, at five we have 30° (*Places points* D *and* E); at six it is 25°, how will we place that, Mehlbach?

MEHLBACH: Put on the fifth line, between 30 and 40—no—

TEACHER: 35? no, it 's 25, right in here (*Points to* F), and at seven we are going to have 20°. (*Places* G.) Now, just one other thing; if the temperature was 30° at one o'clock, and 40° at two, it is easy to see that there was a gradual rise in temperature between one and two o'clock; so it is reasonable to say that a little after one o'clock it was a little more that 30° (*Points to the space between the points* A *and* B), a little more after one, still more above 30°, and so on. And so, if we choose, we can fill in with other points the spaces between the points already placed, these other points representing intervening temperatures; and if I had a record for every minute, I would practically fill up all the spaces,—that is just as good as having what?

PUPIL: A line. (*Teacher draws a line connecting these points, Fig.* I.)

TEACHER: If I draw that line in that particular form, that line pictures to our eye in a very vivid way just how the temperature fluctuated; you see it went up pretty fast there (*Points to the part of the line between* A *and* B), but here (*between* B *and* C) it gradually goes down. At four o'clock it is still at 35°, at five it went down just a little, at six just a little, and this line, by its change in direction, is showing all that. Now, to make it still a little more interesting, we can change this a little more; let us first put down a temperature for twelve o'clock, call it 25° (*Places point* H); my line now gives a complete record of the temperature from noon until seven in the

evening. Suppose now, we are interested in showing how the temperature varied this morning,—how could I arrange it,—suppose this morning at eleven the temperature was 20°, how can I arrange it on this diagram to represent that? (*Teacher points to Fig.* I.)

PUPIL: Put it down as minus 1.

TEACHER: Go off this way? (*Teacher points to the left of* O, *Fig.* I.)

PUPIL: Yes, you could put it down that way.

TEACHER: I am very glad of your suggestion; go back, you mean?

PUPIL: Yes.

TEACHER: I will put it down here (*Places point* M), which will be eleven o'clock, or minus 1,—meaning from what?

PUPIL: 12.

TEACHER: Yes, or from noon. Now we have recorded the fact that it was 20° at eleven o'clock. Suppose this had been an extremely cold morning, and at ten o'clock the temperature was 10°, how will I put that down here? Bob?

BOB: Down opposite ten o'clock.

TEACHER: But I haven't put ten o'clock down yet—where will ten o'clock go?

BOB: Between 20— (*Hesitates*).

TEACHER: Ten o'clock, not ten degrees.

BOB: Ten o'clock will be on the other side, or minus 2.

TEACHER: All right; then suppose at ten o'clock the temperature was 10° (*Places point* N); suppose at nine the temperature happened to be exactly zero (*Places point* P), and suppose at eight it happened to be 10° below zero? How can I indicate below zero?

PUPIL: Go right straight down—

TEACHER: Good, right down in here. (*Places point* R *and joins all the points by a line.*) There is a curve that shows us very nicely the temperature for the day, commencing this morning,—it shows exactly how the temperature varied. That is much more interesting than to look over a lot of numbers. Now,

just as this is more interesting to you, so it will be more interesting to you to see how we can get a picture of an equation. Remember that the secret of all this depends on that scheme of having *one point represent two things at the same time*. Suppose I take this equation, $x + y = 5$; what kind of an equation is that, Silberman?

SILBERMAN: Simple equation?

TEACHER: Simple, yes; anything else you can think of?

SILBERMAN: An impossible equation,—you can't work it.

TEACHER: Is he right? What kind of an equation is that?

PUPIL: Incomplete.

ANOTHER PUPIL: Indefinite, indeterminate.

TEACHER: When you call that equation indefinite, just what do you mean?

ANOTHER PUPIL: One cannot determine any special pair of values for x and y.

TEACHER: Give me some values you do know about.

PUPIL: 3 and 2.

TEACHER: Yes; and I can fill in here, if I choose, 4 and 1, and 2 and 3, and so on. (*Teacher makes the following outline.*)

| x | y |
|---|---|
| 3 | 2 |
| 4 | 1 |
| 2 | 3 |
| 5 | 0 |
| 6 | −1 |

Now, when you called that equation indeterminate, what did you mean? Cushman?

CUSHMAN: You couldn't get any special values for x or y; you could get any number of values—

TEACHER: What condition do you place on any set of them?

CUSHMAN: That added together you get five.

TEACHER: And if I give you that equation, you don't know which particular pair I have in mind. It will be interesting for us to put on this kind of a framework (*Points to another set of squares on board*) as we did before, for temperatures, these various values that we can have for this equation—these various pairs of values—and just as I had a line over there that I called

the hour line, I will have a line here (*Points to* OX, *Fig.* II), that I call the X line, and I will mark on it 1, 2, 3, and so on, and this line I will call the Y line, and mark on it 1, 2, 3, and so on. Will you represent for me upon this scheme the single point that will represent $x = 3$, and $y = 2$, Miss Bruckheimer?

Miss B (*stepping to the board*): $x = 3$ here, and $y = 2$ up there. (*She locates* A, *Fig.* II.)

Teacher: Give me this point, Miss Ralli, $x = 1$, and $y = 4$.

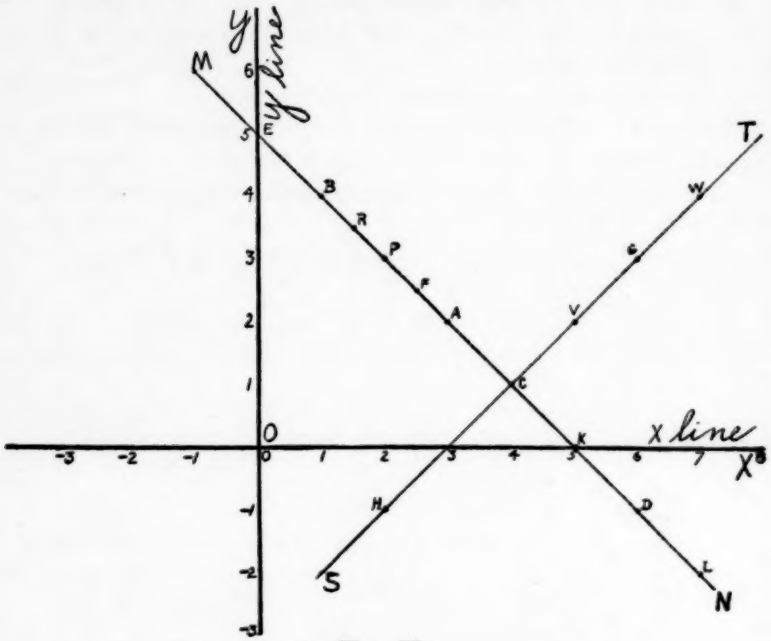


Fig. II

Miss R: (*Steps to the board and correctly locates* B, *Fig.* II.)

Teacher: That will do; this point, $x = 4$, $y = 1$, Miss Kaplan?

Miss K: (*Writes it correctly; she locates* C, *Fig.* II.)

Teacher: While you are at the board, give me the point $x = 2$, and $y = 3$.

Miss K: (*Locates* P *correctly.*)

Teacher: All right; who will give me $x = 6$, $y = -1$. I wonder if you could see how to do that, Burland?

BURLAND: (*Places it correctly at point* D, *Fig.* II.)

TEACHER: All right. By the way, one pair of values I am interested in,—if y happened to equal 5, what is the corresponding value of x, Miss Strauss?

MISS S: x = nothing. (*She places* E *correctly.*)

TEACHER: We usually call it zero; who will give me x = 5, y = 0, will you, Miss Olmstead?

MISS O: (*At board, correctly places* K.)

TEACHER: All right; thank you very much. Another one that I might get,—I think I will just take the trouble to get one or two more,—suppose I take x = −1, y = 6; Humphrey, will you give me that?

HUMPHREY: (*At board, correctly locates* M.)

TEACHER: While you are there, give me x = 7, y = − 2.

HUMPHREY: (*Correctly places* L.)

TEACHER: Very well, thank you very much; now, just make this one so it will stand out a little better (*referring to a point not marked clearly*). Just one or two other points I am interested in here; suppose you should choose x = 2½, what is the corresponding value of y?

PUPIL: y = 2½.

TEACHER: These then, are corresponding values. Mehlbach, can you represent the point x = 2½, y = 2½?

MEHLBACH: Should be x = 2½, that would be y = 2½. (*Places point* F *correctly.*)

TEACHER: Do you think so? All right. If I should take x = 2¼, could you find a pair of values, Miss Carman?

MISS C: Yes, y = 2¾.

TEACHER: Will you represent that pair for me, x = 2¼, y = 2¾, where is y = 2¾?

MISS C: I should say about the same place. (*At the board.*)

TEACHER: Let me see where you think that place is.

MISS C: How did this go (*referring to a point previously placed*)—out this way?

TEACHER: Yes.

MISS C: x = 2¼ would be about here.

TEACHER: That is all right, thank you. Now, please look at all those points which we have located. Anything to interest you?

PUPIL: On a straight line.

TEACHER: That is a very interesting thing; if I just draw this down here (*Joins all the points by the line* MN), I get what? They are on a straight line. You can think of a straight line as any number of points side by side; how many points would there be in that straight line?

PUPILS: Any number.

TEACHER: Very well. Now, take that equation up there, $x+y=5$; how many solutions to that equation?

PUPIL: Indeterminate,—any number.

TEACHER: That is right. I wonder if it happens that the any number of points in this line agree with the any number of solutions in that equation; do you suppose so?

PUPIL: Yes.

TEACHER: That is exactly the situation; all of these points, if we get them, would lie on that line, and any point on the line that you select will represent a solution of this equation, any point you want to take; let 's try it. Suppose first, I should continue my work down here (*Completes the left side of Fig.* II), continue those off in this direction (*Marks down the numbers* $-1, -2, -3$, *etc., on* OX). Now tell me what there would be over here—this would be? (*Points down on* OY.)

PUPILS: Minus 1.

TEACHER: And this? (*Points below* O *on* OY.)

PUPILS: Minus 2.

TEACHER: And this?

PUPILS: Minus 3.

TEACHER: And so on. Now, just reverse what you have been doing. Name that point (*Selects point* L *on the line* MN), that is one point on this straight line; name it, Miss Ralli.

MISS R: $x=7$, $y=2$.

TEACHER: What do you think it is, Burland?

BURLAND: I think it is $x=7$, and $y=-2$.

TEACHER: $y=-2$, very well; he said $y=-2$, $x=7$; does that fit the equation $x+y=5$?

PUPILS: Yes.

TEACHER: Let 's take another; let me take that point, Miss Ralli? (*Teacher points to* M.)

MISS R: That would be $x = -6$—no, $-1$.

TEACHER: And what else—

MISS R: That will be $y = -6$, no, $y = +6$.

TEACHER: Does that fit that equation, Miss Ralli?

MISS R: Yes.

TEACHER: Let me take one up here; take that point. (*Points to* MR), and be just as careful as you can. What do you think that point represents, Miss Strauss?

MISS S: $y = 3\frac{3}{4}$ and $x = 1$ and —no, I think $y = 3\frac{1}{2}$ and $x = 1\frac{1}{2}$.

TEACHER: Does that fit our particular equation?

PUPILS: Yes.

TEACHER: Suppose I took this particular point here (*Points to another point on the line* MN, *just below* R), do you think the value of x and the value of y, as represented by that point, would fit that equation? What is the value of x?

PUPIL: $1\frac{3}{4}$—

TEACHER: —and the value of y?

PUPIL: $3\frac{1}{4}$.

TEACHER: So that will fit?

PUPILS: Yes.

TEACHER: It does fit. That leads us to have faith that any point we choose to select along that line represents a value of y and a value of x which satisfy the equation, $x + y = 5$. Now, just a thing of interest; that particular equation has a name; when you studied algebra last year, you learned, probably, the name of that equation, though you may not recall it, but that equation is sometimes called a linear equation. You see why it is called a linear equation—

TEACHER: —because its picture is a straight line,—but at the time you had it, you saw no reason for its being called linear. And now for another interesting thing. That is the picture of $x + y = 5$. I am going to take another; $x - y = 3$, we will say, and I am going to get the picture of that equation, and I call that "plotting" the equation. I will simply get the points for it, just as I did before. Now, give a few values that will fit that, Miss Carman.

MISS C: 5 and 2, 6 and 3, 7 and 4, 8 and 5.

TEACHER: All right; $x = 5$, and $y = 2$ right there (*Locates* V, *Fig.* II), $x = 6$ and $y = 3$, come along here (*Locates* G); $x = 7$ and $y = 4$, come along here to 7, and go up to $y = 4$ (*Locates* W), $x = 7$, $y = 5$, and so on. If I keep that up, I will get a large number of points as before, and what will those points be on?

PUPILS: Straight line.

TEACHER: I am going to draw that straight line. (*Draws line* ST.) Let 's see if there is anything that interests you—is any point on this new straight line a solution to that equation? (*Points to equation* $x - y = 3$.)

PUPILS: Yes.

TEACHER: Let 's try one or two; take that point right there, that is on this line. (*Points to* C *on line* ST.) Read me the values of x and y represented by that particular point, Miss Olmstead.

MISS O: $x = 4$ and $y = 1$.

TEACHER: Does that fit this equation? (*Teacher points to* $x - y = 3$.)

PUPILS: Yes.

TEACHER: Let us try another. (*Points to* G.) What does this point represent? Pfeiffer?

PFEIFFER: $x = 6$, $y = 3$.

TEACHER: Do these values satisfy our equation $x - y = 3$?

PFEIFFER: Yes.

TEACHER: Take another point. (*Points to* H.) What is that, Burland?

BURLAND: $x = 2$, $y = -1$.

TEACHER: Will they serve in that equation?

BURLAND: Yes, because minus a minus gives plus.

TEACHER: Very well; now, that point (*Points to* C, *Fig.* II), let us come back to that; is it on this line? (*Points to line* MN, *Fig.* II.)

PUPIL: Yes.

TEACHER: And the value of x and y represented by that point does what?

PUPIL: Solves the equation, $x + y = 5$.

TEACHER: Exactly. Let 's see if it is true. (*Teacher substitutes values* $x = 4$, $y = 1$, *in equation* $x + y = 5$ *and finds that*

*they satisfy it.*) But this point C is also on this line. (*Points to line* ST.) What do all points on that line do, Williams?

WILLIAMS: Satisfy the equation $x - y = 3$.

TEACHER: Does the value represented by C satisfy $x - y = 3$?

WILLIAMS: Yes.

TEACHER: So we have $x = 4$ and $y = 1$ fitting both lines and both equations; let 's forget all about that, and see if it 's true. Let us now solve the two equations by the regular algebraic method. (*This was done by one of the pupils who obtained* $x = 4$, *and* $y = 1$.)

TEACHER: Very well; you got that the way you have always been getting it, but I got this same answer without knowing anything about your algebraic method. I have a picture of the solution of those two equations; we give that picture a name; we call it the "graph" of those two equations, and this kind of work we call "graphing"; this (*Points to line* MN) is the graph of one equation, this (*Points to line* ST) the graph of the other; an interesting thing. One equation like that makes one straight line, and another makes another straight line; that point where they cut is the answer that fits both equations, is it not?

CLASS: Yes.

TEACHER: Now, you might say, "Well, that is quite long." So the question now is to reduce speed somewhat—or rather, increase speed and reduce time. How many points does it take to make a straight line?

PUPIL: Only two points.

TEACHER: I got a great number to show that it was possible to make all these points appear on a straight line. If we are working equations of that kind, we will do only the amount necessary to get a solution: suppose we take this new set of equations, $2x + y = 10$, and $x + y = 7$, and now we will do the very least amount of work. Forget the first equation for a moment, and deal with the second. What values satisfy it?

PUPIL: 1 and 6, 5 and 2.

TEACHER: Is that enough?

PUPIL: Too much.

ANOTHER PUPIL: Just enough.

TEACHER: Where will I find $x = 1$, $y = 6$, Miss Kaplan?

MISS K: Here. (*She places point* E *correctly in Fig.* III.)

TEACHER: Where will I find $x = 5$, $y = 2$?

PUPIL: (*Places* F *correctly in Fig.* III.)

TEACHER: I will draw the straight line connecting these, that is my straight line. (*Draws line* AB, *Fig.* III.) Let 's take the other equation, $2x + y = 10$; give me pairs of values that will fit that particular equation, Miss Strauss.

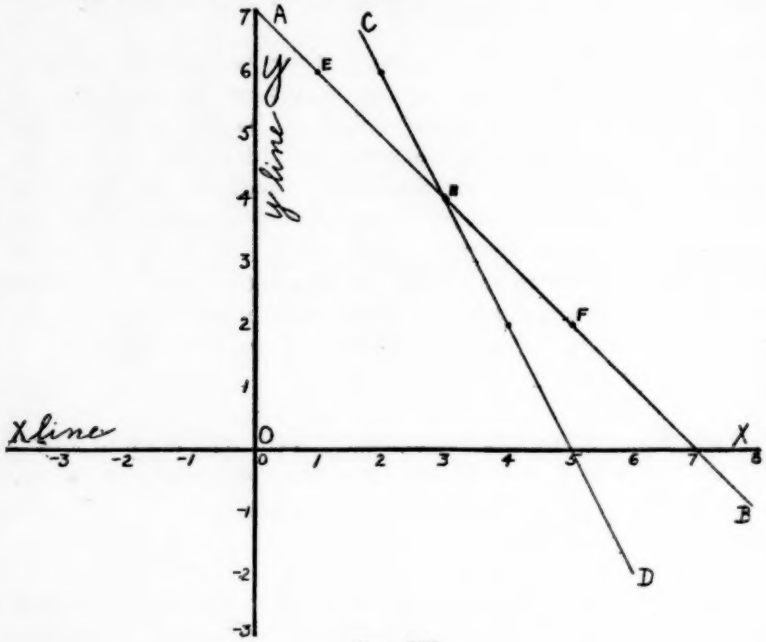


FIG. III

MISS S: 2 and 6, 4 and 2.

TEACHER: $x = 2$, $y = 6$; (*Places this point, and also* $x = 4$, $y = 2$). Connect those by a straight line, and that is a picture of that equation. (*Draws* CD, *Fig.* III.) Now, the point that represents the solution that fits both of these equations is?

PUPIL: $x = 3$ and $y = 4$, their intersection H.

TEACHER: Right; if you worked that in the ordinary way, you would get that same set of results?

PUPILS: Yes.

TEACHER: Try it. (*Pupil works it algebraically and gets same result.*)

TEACHER: Is it clear?

CLASS: Yes.

[Teacher then assigns four sets of simultaneous linear equations, similar to those above, to be solved graphically on cross-section paper for the next day.]

. . . . . .

The recitation of the following day was primarily one of drill. At the beginning of the class hour the teacher called different pupils quickly to the board to locate various points. A new set of equations was then taken up and solved graphically by the pupils, who, one after another, did successive steps of the work at the board. There was no hesitation on the part of any of the pupils in doing this work, and they all showed a thorough grasp on the work of the day before.

The new matter taken up in the class was the graphic explanation of the solution of a pair of inconsistent equations, such as $x + y = 3$ and $x + y = 5$. The pupils had never been able to solve this set algebraically. They graphed the set and found that the lines came out parallel, which showed that there could be no intersection, and hence no common solution. One of the pupils asked what the graphic explanation would be for a pair of dependent equations like $6x + 4y = 12$ and $9x + 6y = 18$. This was assigned as one of the problems for the next lesson, to see if the pupils could interpret it alone. The four problems which were assigned the day before as home work were then taken up one by one, the pupils drawing the graphs on the board and explaining the solution. In this lesson the pupils were told how to find corresponding values of x and y for a given equation when they were not easily found by inspection. They were also given the technical terms *abscissa, ordinate, x-axis, etc.*

# ENGLISH LESSON

## Third Year in Five-Year Course

### *Introductory Note*

This is the second of a series of four lessons on the ballad, the object of which was to furnish a background for the study of "The Rime of the Ancient Mariner" and other narrative poems. It was not the intention to study any one of the poems in detail, but to build up an appreciation of the objective popular appeal of the old ballads, the sympathetic and personal note of the later ones, and an understanding of the simpler details of the ballad form. The four lessons were as follows:

1. The old ballads [Seward, "Narrative and Lyric Poems," pp. 3-19.]
2. The modern ballads [Seward, "Narrative and Lyric Poems," pp. 20-35.]
3. Memorizing from poems studied in class. Discussion of meter.
4. Three or more original stanzas in ballad meter.

. . . . . .

TEACHER: Before we begin to talk about modern ballads, let 's see what you got from your first impression of the old ballads last time. In the first place, give four or five subjects that the old ballad writers were especially interested in.

PUPIL: Fighting, principally, and some romance.

TEACHER: What do you mean by *romance?*

PUPIL: *Romance*—that is all.

TEACHER: People meant different things—fighting, or love—do you mean *love?*

PUPIL: No, fighting—romance. (*Teacher writes on board* romance.) That is about all I know, in the first—old ballads; oh, yes, one gruesome one, about c—

TEACHER: Corbies?

PUPIL: Yes.

TEACHER: Horror, perhaps.

PUPIL: Yes.

TEACHER: Elsworth?

ELSWORTH: It only happened once,—lovers separated and met again.

TEACHER: Yes. (*Writes* Fighting, Tales of Horror, Shipwreck, Parted Lovers.) Is that a fair list? I should think so. Let us see about the spirit in which they were written, that is, the kind of qualities the people in those ballads showed, and the kind of qualities in human nature people of that day liked.

PUPIL: I think bravery.

TEACHER (*writing* bravery): Anything else?

PUPIL: A hero and a villain.

TEACHER: Hero and villain; in other words, you take sides?

PUPIL: Yes.

TEACHER: What other qualities besides bravery?

PUPIL: Treachery, of the king, in the ballad of Johnie Armstrong.

TEACHER: Yes, and the hero shows what quality?

PUPIL: He believes in the king even when he is summoned before him.

TEACHER: Good faith on one side, and treachery on the other. Anything else?

PUPIL: Honor.

TEACHER: Honor, yes. (*Writes* honor.)

PUPIL: A great deal of honor among themselves.

TEACHER: Loyalty to each other; and as regards their enemies, what?

PUPIL: They used to fight for fun, and they had certain rules, they were not really angry, they had to keep certain rules.

TEACHER: In other words?

PUPIL: They couldn't do just as they wanted to.

TEACHER: There were rules of honor even toward your enemy, a sort of amateur spirit.

PUPIL: Courtesy to their enemies.

TEACHER: Courtesy,—and perhaps we might say this includes being true to the rules. Could we say anything about the style in which these poems were written, kind of language, and kind of verse form?

PUPIL: Could be put to music.

TEACHER: Easy to sing, for one thing?

PUPIL: Yes.

TEACHER: Complicated tunes, or simple?

PUPIL: Simple.

TEACHER: How about the words, the English?

PUPIL: Old English and Scotch.

TEACHER: Old English and Scotch; easy or hard to understand?

PUPIL: After you have read two or three, I don't think it is hard.

TEACHER: If you had been an old Scotchman of those times should you say they were written in hard or easy language?

PUPIL: Simple,—quaint.

TEACHER: Simple and quaint—old-fashioned. Let us turn to the ballads you had for to-day; see how they compare with these old ones. The first one, Lord Ullin's daughter—as regards the subject matter, is it the kind of story you think would appeal to ancient writers?

PUPIL: It seems so; this one was about an elopement, they seem to write that kind of story.

TEACHER: Anything else?

PUPIL: Shipwreck.

TEACHER: Do you think the old ballad writers would have been satisfied with the way the story came out?

PUPIL: I don't think so; they liked to see their side win; the lovers won in this case, but were drowned; I don't think they would have liked it that way.

TEACHER: If they are going to get away from the father, they ought to get away clear. I think that is true; things end simply in the old ballads; it is an out and out tragedy or a happy ending.

PUPIL: They had some death, like Johnie Armstrong, where the hero was killed.

TEACHER: How was he killed?

PUPIL: By treachery.

TEACHER: Was there any here?

PUPIL: No.

TEACHER: Were they killed through anybody's fault, or by accident?

PUPIL: By accident.

TEACHER: How is it in the old ballads?

PUPIL: In the first stories they were not,—a shipwreck.

TEACHER: But in most cases it is a matter of somebody's treachery. In Sir Patrick Spence who gets drowned?

PUPIL: The Scotch nobles.

TEACHER: There it is the lords and all those other fine noblemen. As far as the style goes in Lord Ullin's daughter, should you say that the story goes rapidly, as rapidly as possible, or should you say that if an old ballad singer were telling the story, there is something that could be left out?

PUPIL: I think so.

TEACHER: Can you see any group of verses that could be left out without breaking the story up?

PUPIL: I think where it describes the boat (*reads*)

> "The boat has left a stormy land,
> A stormy sea before her—
> When, oh! too strong for human hand
> The tempest gather'd o'er her."

Those descriptions could be left out; and (*reads*)

> For sore dismay'd, through storm and shade
> His child he did discover:—
> One lovely hand she stretch'd for aid,
> And one was round her lover.

TEACHER: You think the picture of how she looked in the boat does not count?

PUPIL: I like it, but it could have been left out.

TEACHER: The old ballad singers would have left out that part. Are there things in the earlier part of the poem that could be left out if you just wanted the story?

PUPIL: The first verse.

TEACHER: Better if they got started at once, perhaps. Miss Weiss?

MISS W: The third verse.

> And fast before her father's men
> Three days we've fled together,
> For should he find us in the glen,
> My blood would stain the heather.

He says right after that that the horses are right behind him, so he could have left that out.

TEACHER: He spends too much time in talking to the boatman, that is true.

PUPIL: The seventh verse:

> By this time the storm grew loud apace,
> The water-wraith was shrieking;
> And in the scowl of Heaven each face
> Grew dark as they were speaking.

TEACHER: You can't help wondering why they didn't get in the boat, and stop talking. The old ballad writers pared it all down to nothing but the story. Turn to the next one,—Lady Clare; would that have pleased the old ballad writers?

PUPIL: I think it would have. It is just the kind of love story they liked,—it all turned out well.

TEACHER: Turns out well in the end, and in it the lovers show what kind of qualities?

PUPIL: Faithful.

TEACHER: You like that?

PUPIL: Yes.

TEACHER: The sort of things anybody would like, all the admirable qualities of a good love story. I wonder if any one noticed the language of this poem, anything that would show that Tennyson was trying to imitate the language of the old ballads?

PUPIL: "I trow they did not part in scorn."

TEACHER: "I trow"—that sounds old-fashioned. Anything else?

PUPIL: The way he brings in the nurse,

> In there came old Alice the nurse,
> Said, 'Who was this that went from thee?'
> 'It was my cousin,' said Lady Clare;
> 'To-morrow he weds with me.'

And "thee" and "thou."

TEACHER: How about the word "Said," has that any subject?

PUPIL: Alice the nurse is subject of both came and said.

TEACHER: Yes: anything else?

PUPIL: The last of that verse, "To-morrow he weds with me."

TEACHER: That sounds old-fashioned; anything else?

PUPIL: Some of the repetition.

TEACHER: What line?

PUPIL: "Are ye out of your mind, my nurse, my nurse?"

TEACHER: And "Yet here's a kiss for my mother dear,
My mother dear, if this be so."
sounds like the kind of repetition a man would make on a guitar, or something like that.

> "Play me no tricks" said Lord Ronald,
> For I am yours in word and in deed.
> Play me no tricks" said Lord Ronald,
> "Your riddle is hard to read."

It comes in again and again. When you come to Lucy Gray, a poem which was very famous, and which is, perhaps, a little hard to get the real spirit of at first, did any one feel especially attracted by that? Miss Graves? What did you like about it?

MISS G: It was entirely different from the others,—the way it turned out,—well, just the description in everything,—the snow,—then, it seemed to go easier than the others.

TEACHER: We have rather taken it for granted all along that all these were very easy,—easy to sing.

PUPIL: I don't think the later ballads are nearly as easy to sing as others.

TEACHER: You think this Lucy Gray is different, you like the descriptive verses in it? Any special phrases or description that particularly struck you, Miss Graves?

MISS G: I don't see any just now—

TEACHER: Any one happen to remember any?

PUPIL: "The minster-clock has just struck two."

TEACHER: Miss Thibaut?

MISS T: "Her feet disperse the powdery snow,
That rises up like smoke."

TEACHER: "Her feet disperse the powdery snow,
That rises up like smoke."

Would that be in place in one of the old ballads? They weren't interested in the appearance of the snow very much. Miss Weiss?

MISS W: I think I like this ballad because it leaves something to the imagination, the rest tell you everything; it doesn't say surely that she is still alive, it leaves it to you to think about it.

TEACHER: Do you think Wordsworth himself thinks she is still alive?

PUPIL: I think he does; I don't know if he does, but I think he does.

TEACHER: In this remote country region, the people who would maintain that she was alive would be?

PUPIL: The country people.

TEACHER: What is Wordsworth's attitude?

PUPIL: I don't think he credits it very much; I think he respects it, but I don't think he credits it.

TEACHER: He doesn't tell you whether he expects you to believe it or not; but at any rate, there is a fineness of feeling towards the country people that makes him respect the country superstition.

PUPIL: I think she must have been lost, because if she hadn't, she might have come back to her mother and father.

TEACHER: Of course, your imagination there is piecing it out; Wordsworth doesn't tell you out and out that she was drowned.

PUPIL: I think he does; he says her footsteps stopped in the middle of the plank, and something must have happened there.

TEACHER: The actual drowning was not described; you cannot help feeling that in the old ballads they would have given you a full description, like Sir Patrick Spence; the ballad ends how?

PUPIL: Wordsworth was not trying to imitate the old ballads, was he?

TEACHER: No; it is a good deal further away from the old ballads than the others we have had, it is a more imaginative poem, more beauty of phrasing and thought. Any other questions or comments about Lucy Gray?

PUPIL: I like this verse:

> "They follow'd from the snowy bank
> Those footmarks, one by one,
> Into the middle of the plank;
> And further there were none."

TEACHER: You think that is because of the things Wordsworth does not say, the fact that he keeps a certain amount to himself?

PUPIL: Yes.

TEACHER: That quality of reticence, isn't it? How is it in modern times; have you noticed how you respect people who do not say quite all they feel; they keep their deeper feelings largely to themselves, and you can only guess at it by what is left unsaid? Are the kind of people who are represented in this poem the sort of people you ordinarily encounter in the old ballads?

PUPIL: I don't think we do; the chief characters were the nobles and barons, the highest people in England and Scotland.

TEACHER: These people were what?

PUPIL: Common people.

TEACHER: You get that from what phrase in the poem? Any one?

PUPIL: Just after he asked her to go for her mother: "At this the father raised his hook," he wouldn't have done that if he hadn't been a working man.

PUPIL: I don't think he would have sent Lucy Gray after her mother in the snow, they would have been riding in a coach and four.

TEACHER: How is it with some of the other early writers? Was Shakespeare more interested in common people or wealthy?

PUPIL: Wealthy.

TEACHER: Kings and nobles; the people were always well born and wealthy; that is true of practically all early literature; the fact that poor people could be interesting did not come into literature very early. The Wreck of the Hesperus,—what did you think of that, Miss Graves?

MISS G: I think that was very good because it described a shipwreck; that is what the old ballads are like.

TEACHER: A good deal more description than you found in the old ballads?

PUPIL: Yes.

TEACHER: Could you compare that with Sir Patrick Spence in any way?

PUPIL: It described the shipwreck in it.

TEACHER: How about the kind of people that got wrecked?

PUPIL: Poor people.

TEACHER: Yes, this old man and his daughter, instead of being Scotch lords and nobles. Did any one in the class feel that there was something lacking in the way these people took their fate, that you didn't feel in Sir Patrick Spence? He has a nobleman show a certain quality that made him more interesting than this old skipper.

PUPIL: As soon as the storm came on, he bound his daughter to the mast,—they just stood there and were frozen.

TEACHER: In other words, the only feeling you can get up is that you pity them, and that is all; is that so in Sir Patrick Spence?

PUPIL: No, you have sympathy.

TEACHER: Because of what?

PUPIL: Because of the way they tried to save themselves.

TEACHER: A gallant lot of men making a desperate fight, not only a fight for life, but even to save their clothes from being spoiled; they put up the best fight they could. It seems rather childish to us to have them think about their clothes; why do you suppose the old ballad singers put that in?

PUPIL: I think to show their high birth.

TEACHER: Yes; and it showed their willingness to struggle to defend their dignity, even in trifles. Anything else?

PUPIL: In one way they are alike, because this has such a gruesome end.

TEACHER: The figure of the dead girl being washed on the beach,—that would have pleased them because of its horror.

PUPIL: I think this is better than Sir Patrick Spence because they were not afraid to weather anything.

TEACHER: I am a little sorry that in this edition we have not the fuller form of Sir Patrick Spence; in the fuller form there is a picture of Sir Patrick Spence and his men at the Court of Norway, and the Norwegians accuse them of spending the queen's money, and Sir Patrick turns on them and says, "Make ready," etc., and the man replies, "Now, never alack," etc., and explains the signs of the weather, but Sir Patrick Spence says, "Never mind the storm, we will put out to sea." It was the dangers of navigation they dreaded most. There is another thing too, in ancient navigation, do you know anything about it, that made it dangerous?

PUPIL: It was not nearly as sure as at this time, and they were more afraid of the sea just as the sea.

TEACHER: And their ships were not nearly so good.

PUPIL: At that time they had no good compass, and they couldn't steer.

TEACHER: Do you think this poem shows also the points made about there being more description than the old ballad writers would have allowed?

PUPIL: In the last part they skip from the ships getting wrecked, to the next day when the people on land see the men coming in.

TEACHER: There is a gap; how about descriptive phrases that could be left out?

PUPIL: The second verse,—that has nothing to do with the story.

TEACHER: No; when a writer begins to describe how pretty his heroine is, you expect what?

PUPIL: A love story.

TEACHER: The listeners to the old ballads would have felt cheated in hearing how pretty the girl was, and then having no love story.

PUPIL: The Hesperus has a verse at the end that makes no difference to the story.

TEACHER: Did any of you make anything out of this next poem, "La Belle Dame Sans Merci"?

PUPIL: I understood that this fairy was a sort of syrene—

TEACHER: Siren.

PUPIL: —siren, that lured people, and then disappeared from them, and let them wake up in some strange place.

TEACHER: Does it say so?

PUPIL: Yes, he wakes up in a strange valley.

TEACHER: Should you say that this was a poem, as you say about Lucy Gray, where much was left to the imagination, or whether the thing was actually put down in so many words?

PUPIL: It was told right to you.

TEACHER: He tells you about meeting the fairy, and about waking up in a strange place?

PUPIL: It says so.

TEACHER: We have had no fairy story in our collection of old ballads. Have you happened to see the ballad of Tom Lane, who was carried away by fairies; you never happened to know that story? He reveals to the girl who loves him how to save him from the fairies; if she will go out on Midsummer night, and watch the train of ponies ride past:

> "First let pass the black, Janet,
> And then let pass the brown,
> But when there comes the milk-white steed,
> You must pull the rider down."

As she holds him, the fairies will turn him into all sorts of strange creatures, but if she holds on tight, he will be restored to his true shape. That is the way those old ballad singers treated fairy stories, in the spirit of Jack and the Beanstalk; you never knew what was going to happen next; nothing dreadful or weird, only mysterious. Just what is the situation in this story; can you explain it, Miss Graves?

MISS G: He goes out, and meets this kind of fairy, and she sings to him, and he goes to sleep, and wakes up and finds himself somewhere, he doesn't know where, and he comes back, and they ask him why he looks so pale.

TEACHER: Why does he?

MISS G: He was scared, I guess.

TEACHER: In the actual facts, the things that happened, was there anything strange?

PUPIL: He dreamed he saw warriors and princes—

TEACHER: For all we know, it might have been a dream?

PUPIL: Yes.

TEACHER: Where does the weirdness and strangeness come in?

PUPIL: I don't think it is in this dream, it seems to be a warning, I think that was why he was afraid; I was kind of disappointed, I thought something would happen, but it stops off right there; it doesn't say whether there is going to be a fight.

TEACHER: Did you get the fact that there would be any fight at all?

PUPIL: Yes.

TEACHER: Did you?

PUPIL: "I saw pale kings and princes too,
Pale warriors, death-pale were they all:"

it speaks of pale warriors.

TEACHER: Does that mean people who were going to fight, necessarily?

PUPIL: No, people who might have already been in a fight.

TEACHER: What was the business of knights at that time?

PUPIL: To fight.

TEACHER: This might mean, then, merely that they were knights; not that they were about to fight; how did all these pale knights and warriors come to be where he could see them; what had happened to him?

PUPIL: Hadn't this fairy—

TEACHER: The same fairy had lured them away also into this dream world. Nothing happened but his being lured out of this world into a world of fairies; what effect did this have on him afterwards?

PUPIL: He turns pale—

TEACHER: Strangely altered, something mysterious has happened, and it produces a mysterious and weird and terrible effect on him; but just what is the mystery?

PUPIL: Didn't he think that the fairy was supposed to be Death?

TEACHER: Did any of you think that?

PUPIL: It seems to me if these knights and warriors—

TEACHER: Still, I don't know, if it were, he would not come back, would he? Let us leave that a mystery until the next time.

[Assignment for next lesson.]

# DOMESTIC SCIENCE LESSON

## Third Year High School

### *Introductory Note*

The lesson observed was the second in a series of three devoted to the subject of bread-making. The majority of the class had taken domestic science in both the first-year class and the seventh grade, but a number of them were new students. The work therefore was to some extent review for a part of the class.

In the fall a series of lessons was given on the subject of canning and preserving. In these lessons the subject of yeasts and molds was studied with a view to preventing their growth and spoiling the food. In the series on bread-making the subject of yeast is taken up from another view-point, that of encouraging the growth of the variety of yeast known as brewer's yeast.

The first lesson in the series is devoted to a discussion of the material on yeast given in a book ("Household Bacteriology," S. M. Elliott) to which the class had been referred. This discussion was supplemented by a few experiments performed by one member of the class for the benefit of those pupils who had not performed the experiments themselves in the first-year class. These experiments consisted in showing the effect of various temperatures on the yeast plant, testing the gas given off during the growth of the yeast, and examining the yeast cell under the microscope. This discussion occupied about forty minutes, after which each member of the class mixed a batch of coffee bread which was set to rise and baked by two or three members of the class who remained for the noon hour.

The third lesson in the series was to be given to the making of fancy rolls, with a written review on the subject of bread-making. Other points brought out in the third lesson were the heat of the oven and length of time for baking bread properly;

the comparative indigestibility of underdone bread and the comparative cost of home-made and baker's bread.

In the lesson observed, the dough was set to rise by the teacher a sufficient time before the class appeared so that it was light and ready for kneading when the class came in.

The practical difficulties in the giving of a bread lesson are caused by the length of time it takes to complete a loaf of bread even when using an excess of yeast. In a lesson of one hour and fifteen minutes the process must always be divided so that the class will perform part of the process in one lesson and part in the next. In this particular lesson the class finished the bread that had been set by the teacher. At the close of the hour they mixed a batch of bread for the first-year class to work upon during the early part of the afternoon. The practical work must sometimes precede the discussion of theory in order to allow time for the rising of the bread, even though it would be more logical to reverse the process.

Mimeographed copies of the following notes on yeast were given to each pupil at the close of the first lesson in the bread series.

A summary of facts obtained from class readings and discussions, and from experiments performed on yeast.

*Yeast*

1. Nature of yeast: Yeast is a microscopic one-cell plant found in many varieties, floating in the air about us. Yeast in common with other plants requires food, oxygen and moisture. The variety of yeast used in bread-making is cultivated from brewer's yeast. A multitude of cells are collected, mixed with a starchy substance and pressed into cakes called compressed yeast.

2. Action of yeast: The food most acceptable to the yeast plant is sugar. If no actual sugar is present, some of the starch is converted into sugar for the yeast to feed upon. In feeding the yeast will turn a small part of the sugar into alcohol and carbon dioxide gas. The alcohol is driven off in the oven, and the gas expanding, raises the bread and in its turn is driven off, thus making the bread more palatable and more digestible.

3. Effect of temperature upon yeast: Yeast will do its best work in a temperature of from 70-90 degrees F. It works slowly under 70 degrees, and not at all below 40. Cold will not kill yeast, but after being exposed to extreme cold, and when

raised to a temperature of 70, it will begin to grow. When raised to a temperature of 130-150 degrees the yeast plant is killed outright.

. . . . . .

TEACHER: First I would like to have you come around the board to see about the kneading of this bread. (*Pupils gather about kneading board.*) This dough has been standing for about forty minutes,—has it risen sufficiently?

PUPILS (*in chorus*): Yes.

TEACHER: How can you tell?

PUPIL: Because it has gone way up.

TEACHER: What can you see there?

PUPILS: Bubbles.

TEACHER: Now I am going to cut out the dough; what am I doing?

PUPIL: Letting the air out.

TEACHER: Air?

PUPIL: Gas,—$CO_2$.

TEACHER: Have you any idea what a very good cook likes to have her board look like?

PUPIL: Clean and white.

NATALIE: Very little flour,—I think you always sift it.

TEACHER: I have a little sifted flour beside the board; knead flour in and leave the board perfectly clean; we will try it. This will make rather a small loaf.

GLADYS: Won't it rise?

TEACHER: Yes, a good deal; turn it over in the flour to keep it from sticking to the hands; there are several different ways of kneading, use the palm of the hand, and keep turning the dough and pushing it back; press it thoroughly all together. How many have seen it done in this way?

PUPILS: I have.

TEACHER: Can any of you remember what is the reason for kneading?

ELAINE: It makes it light.

PUPIL: Stays together.

TEACHER: It doesn't make it light, does it? Watch this.

PUPILS: No.

TEACHER: Takes the lightness away. What is the use of taking all this trouble? What am I pressing out?

KATHRYN: Bubbles.

TEACHER: I press the bubbles of gas out. Do you remember the material in the flour that stretches?

VERA: Gluten.

TEACHER: And kneading or stretching the gluten makes bread a better texture. You didn't knead your coffee bread.

PUPIL: No, too soft.

TEACHER: How can I tell when this is kneaded sufficiently?

PUPIL: Press your finger in, and the dough will rise; no, that isn't quite enough.

TEACHER: A little more, perhaps. (*Kneads again.*) I want you to be able to get your bread kneaded and ready to rise at five minutes of eleven; it has risen ready to knead, and we have to knead and put it in the pans, making it a fairly good shape (*showing*); now, what shall I do with it?

MARGARET: Let it rise again.

TEACHER: And where shall I put it to let it rise?

NATALIE: In a lukewarm place.

TEACHER: How shall I know that it is risen enough?

ELAINE: It will puff up,—twice as much.

TEACHER: You are to get yours kneaded, and in your pans, and set it to rise first. I want Kathryn and Edna to make whole wheat bread, and Mary and Helen to make graham, and Elsa and Esther whole wheat, and Natalie and Vera whole wheat, and the others white bread. (*Pupils work in pairs, take portion of dough which teacher gives them, and begin to work.*)

GLADYS: Is it necessary to sift the flour, Miss ——?

TEACHER: Yes. I had better remind you that you need particularly clean hands for this. (*Pupils get boards and sift flour on them, knead dough, test to see if it is of the right consistency, and butter pans.*)

TEACHER: I want every girl to do the kneading.

ELSA: Miss ——, do we need two pans?

TEACHER: I think so, yes, that will be better. (*Pupils place dough in pans, label with their names, and place in warming oven to rise, then scrape and clean boards; teacher calls class to order.*)

TEACHER: I don't wish you to wash your dishes, for this reason: I am going to have you mix some Parker House rolls for the first high-school class to finish before you go out, and you may use the same bowls and dishes. Now, I want to see how much you remember of last Tuesday's lesson. When I put the bread to rise this morning, I wanted it to rise quickly. How did I accomplish that, Edna?

EDNA: You put it in a place between 70 and 90 degrees for it to rise.

TEACHER: Tell me *all* about it, the setting and rising.

EDNA: Yeast is a one-cell plant, that feeds on moisture,—feeds on sugar, and when it reproduces it gives off carbon dioxide gas—

TEACHER: Is she really answering the question? Don't tell me everything you know about yeast,—just answer the question. What was the question, class?

PUPIL: If you wanted it to rise quickly, what should you do?

TEACHER: Did the fact that the yeast reproduced, or budded, have anything to do with this, or did she tell us that too soon? Begin again, Edna.

EDNA: Put in a place between 70 and 90 degrees, because otherwise it wouldn't rise,—yeast wouldn't act.

TEACHER: How does the yeast make the bread rise?

ELAINE: When it grows it gives off carbon dioxide gas, and that makes the bread rise.

TEACHER: And can any one add anything to that?

PUPIL: Yeast feeds on sugar and gives off carbon dioxide gas.

TEACHER: Sometimes we use no sugar; we can make it with simply water, flour, salt and yeast; what does the yeast do when it doesn't get any sugar?

ELAINE: Moisture.

TEACHER: If yeast doesn't have sugar to feed upon, will it make the bread rise?

PUPIL: Yes.

TEACHER: How so?

PUPIL: Warmth.

TEACHER: Just warmth alone?

PUPIL: Heat.

TEACHER: Have we any plants that can grow with no soil—no food?

PUPIL: It feeds on the ingredients in bread.

TEACHER: What ingredients,—you only spoke of sugar.

ELAINE: Salt.

TEACHER: Will salt make yeast rise?

PUPIL: No.

GLADYS: Flour.

TEACHER: Do you think it will feed on flour?

ELAINE: Doesn't it feed on air?

TEACHER: Have we any plants at all that feed on air alone? There is a species—the orchid—but no others. This is something that was not in the book which we read on Tuesday,—but there is a material in the flour that will convert some of the flour into sugar. If we didn't use sugar, can you tell me about the length of time it would take the yeast to act?

ELAINE: Much longer.

TEACHER: If we want it to hurry, we put some sugar in, as we did here. How long are we going to let it rise?

ELAINE: Until when you put your finger in, the dough will come right up again.

TEACHER: Yeast is working all the time, and it doesn't do any special harm, but is there anything else in the bread that may begin to work if we let it go too long?

PUPIL: The milk, it will get sour.

VERA: There are other little organisms that will produce their action and make the bread sour if we let it go too long.

TEACHER: When we put it in the oven, what becomes of all those organisms?

PUPIL: They die.

TEACHER: Prove it.

PUPIL: They will not live after a certain degree—they die.

TEACHER: Why? Have you done anything this year that proves that?

ELAINE: Put some yeast in a very cold place and put ice in it—

TEACHER: We are talking about the oven,—how can you prove that the oven heat kills it?

PUPIL: Because if you put it in a—(*hesitating*).

TEACHER: O, you can prove that to me.

PUPIL: It doesn't rise, the yeast is killed.

TEACHER: What did I ask?

PUPIL: How can we prove that heat kills yeast.

TEACHER: Where have you met yeast before this year? other than in bread.

PUPILS: In canning.

TEACHER: What did we do there to keep the canned fruit from fermenting?

GLADYS: The heat killed it.

TEACHER: How did you know it? How did we prove it,—that the heat had killed the yeast that was settling all the time on the fruit?

VERA: We boiled the fruit first, and put it in jars, and it didn't spoil.

ELAINE: Also boiled the jars.

TEACHER: And didn't we prove it by keeping our fruit? It is keeping now,—we have it here. Can I keep a batch of dough over night so that I can have fresh biscuits in the morning?

NATALIE: Yes, but put less yeast in.

TEACHER: Explain.

NATALIE: If you put more yeast in, it will rise quicker.

TEACHER: That was not what I meant. I am going to bake bread to-day, but I want fresh biscuits in the morning; can I do that?

NATALIE: You can leave it rise to the required height, and put it in the ice box, and the cold deadens it.

TEACHER: Should it rise before you put it in the ice box.

PUPIL: No, put it in after kneading.

TEACHER: How can you prove that it will keep over night?

NATALIE: We had an experiment that shows it.

TEACHER: What?

NATALIE: We put some yeast in a little tube, and put it on ice, and nothing happened, but when it was warmed, it began to act.

TEACHER: Did you see this?

PUPIL: Yes.

TEACHER: How many agree?

(*Hands*)

TEACHER: What is the difference between extreme cold and extreme heat in the effect upon yeast?

GLADYS: Yeast doesn't act in extreme cold, but it isn't killed; heat kills it.

TEACHER: How high a temperature will kill it?

PUPIL: 130.

PUPIL: 150.

TEACHER: 150 or 170; what goes on below 70?

PUPIL: Nothing.

TEACHER: Nothing at all?

PUPIL: Just deadens it.

TEACHER: If we let our bread rise over night, do we always have a temperature of 70?

PUPIL: Takes much longer.

TEACHER: Yeast will act at how low a temperature?

PUPIL: 40 degrees.

TEACHER: Yes; and below 40 it doesn't act at all. If you made your bread with water instead of milk, would you scald your water, and let the butter and sugar and salt melt in it?

PUPILS: No.

TEACHER: Why?

PUPILS: We just do that to keep the milk from souring.

PUPIL: You have to keep all bacteria out.

TEACHER: How hot would you have the water?

PUPIL: About warm, or nearly hot.

TEACHER: What is your object in heating it at all?

PUPIL: To kill the bacteria,—you have to have it at the boiling point.

TEACHER: What bacteria do you mean?

PUPIL: May have germs.

TEACHER: Does water ordinarily sour?

PUPIL: No; just hot enough to melt butter and sugar and salt.

TEACHER: Do any of you know the difference between whole wheat bread and white? Have any of you ever been put on a diet, or know of any one who had?

PUPILS: Yes.

TEACHER: Where graham or whole wheat bread was desirable? What is there present in this that we do not have in white bread?

PUPIL: There is whole wheat there, and in the white the husk is taken off.

TEACHER: But you have more of that husk in the graham flour than in the white. I want you to watch as I pour this out—this graham flour I sifted through the sifter (*Shows quantity of bran*); what is that bran composed of? Have any of you ever chewed it?

PUPILS: Yes.

TEACHER: What part is it of the wheat?

PUPIL: Bran.

PUPIL: Outside covering.

TEACHER: Yes, it is nothing but woody fibre. They put a quantity of that in graham flour,—I have sifted it out. What do you think would be the effect on the digestive organs of all that material?

PUPIL: Scrapes the inside of the stomach, and causes the digestive juices to flow more freely.

TEACHER: That is a good thing to know. I heard someone speak of it as a brush; if you took it every day it might be injurious. A few years ago they performed an experiment on some workmen, who complained that the "black" bread never stayed by them, and they preferred white. They found that this is very true. This irritating material hurried much of the bread through undigested, so it is not desirable to take it all the time. Will you take out your sheets on the German Coffee bread, and Parker House rolls. I want each of you to mix this quantity—

PUPIL: Work together?

TEACHER: Yes, for this; I want you to set it to rise for the first time. Suppose you get it thoroughly mixed, and ready to rise at 11:30, how long will it have to rise?

PUPILS: About two hours—

PUPILS: An hour and twenty minutes.

TEACHER: Yes, or about an hour and a quarter. At what temperature should we put this to rise?

PUPIL: Is this just like bread?

TEACHER: Quite similar. How many would say near 90 degrees, just as high as we can get it?

(*Hands*)

TEACHER: This bread this morning only took about thirty-five minutes, and I had it over here (*indicating stove*)—about 90 degrees.

PUPIL: I would say about 80.

PUPIL: About 70.

PUPIL: 85.

TEACHER: Where had we better put it?

PUPIL: In a little warm water.

TEACHER: This room is rather warm—we will set it right here, and if, when you go from the room, it has not begun to rise, we will raise the temperature a bit. We will mix it as usual, I think, and give it an hour and a quarter; ½ cup milk, ¾ tablespoonful butter, ½ tablespoonful sugar, ¼ teaspoonful salt, 1 yeast cake for rapid work (four times as much as the recipe calls for), 2 tablespoonfuls water, and flour enough to make a stiff dough.

PUPIL: Before we had one tablespoonful water.

TEACHER: In this case it calls for ¼ cup water to 1 cup yeast, and you will need the same. Start with a cup of flour, and work up from that, so you get a dough that will separate from the bowl. Before you begin working, I want you to come and look at your bread; I will ask Margaret to be responsible for the oven; each one see the condition of her bread, and get it in the oven when necessary. (*Girls look at bread, and ask various questions of teacher; then return to boards, mix ingredients into bowls.*)

TEACHER (*several minutes after*): I think some of these loaves are ready to go into the oven. (*Pupils examine loaves, and place some in oven.*)

TEACHER: I want you to remember that the next class will have to knead this bread in the condition in which you leave it, and if it is too soft, they will get all stuck up with it; put enough flour in so that it won't be sticky.

TEACHER (*shortly after*): I smell the bread on the top shelf, I think.

[Some of the pupils go to oven and shift the loaves. They then clean utensils and put away; and Parker House rolls are left for next section, first-year high school, to finish.]

. . . . . .

*Application of Principles learned in Preceding Lesson*

Bread

| | |
|---|---|
| 6 c. flour | 2 c. milk |
| 2 tb. butter | 1 tb. sugar |
| 1 t. salt | 1 yeast cake |

Scald milk, and add to sugar, salt and butter, which are in a large bowl. When luke warm add yeast which has been softened and mixed thoroughly with 1 qr. c. warm water. Mix in one cup of flour, using back of spoon to mash out lumps. Add rest of flour gradually, to make a stiff dough. Work with knife till dough does not stick to bowl. Let this rise till double its bulk. Turn on floured board and knead until it is elastic. Shape like a loaf of bread and place in buttered tin. Let rise as before. Bake in moderate oven 40-60 minutes. This amount will make two loaves. To tell when bread is done, tap it, and if it sounds hollow and shrinks from side of pan, it is done.

Entire Wheat Bread

| | |
|---|---|
| 2 c. scalded milk | 1 t. salt |
| 1 qr. c. sugar or | 1 yeast cake dissolved in |
| ⅓ c. molasses | 1 qr. c. luke warm water |

4⅔ c. coarse entire wheat flour

Add sweetening and salt to milk; when luke warm add dissolved yeast and flour; beat well; cover and let rise to double its bulk. Proceed as for white bread.

Graham Bread

| | |
|---|---|
| 2½ c. hot liquid (water, or milk and water) | 1 qr. yeast cake in 1 qr. c. luke warm water |
| ⅓ c. molasses | 3 c. flour |
| 1½ t. salt | 3 c. graham flour |

Prepare and bake as Entire Wheat Bread. The bran remaining in sieve after sifting graham flour should be discarded.

### Parker House Rolls

2 c. scalded milk
3 tbsp. butter
2 tbsp. sugar
flour
1 tsp. salt
1 yeast cake dissolved in
1 qr. c. luke warm water

Add butter, sugar and salt to the milk; when luke warm, add dissolved yeast cake and three cups of flour. Beat thoroughly, cover and let rise until light; cut down and add enough flour to knead (it will be about 2½ cups). Let rise again, toss on slightly floured board, knead, pat and roll out to one-third inch thickness. Shape with biscuit cutter first dipped in flour, and dip handle of case knife in flour and with it make a crease through the middle of each piece; brush over one-half of each piece with melted butter, fold and press edges together; place in greased pan, one inch apart, cover, let rise, and bake in hot oven twelve to fifteen minutes.

### German Coffee Bread

1 c. scalded milk
⅓ c. butter
1 qr. c. sugar
½ tsp. salt
flour
1 egg
⅓ yeast cake dissolved in
1 qr. c. luke warm water
½ c. raisins stoned and cut in pieces

Add butter, sugar and salt to the milk; when luke warm add dissolved yeast cake, egg well beaten, flour to make stiff batter, and raisins. Cover and let rise over night; in morning spread in buttered dripping pan one-half inch thick. Cover and let rise again. Before baking brush over with beaten egg and cover with following mixture: melt three tablespoons of butter, add one-third cup sugar and one teaspoon cinnamon; when sugar is partially melted, add three tablespoons flour.

These recipes were given to the pupils to work from. Notebooks are kept by pupils in which these sheets are filed.

# GERMAN LESSON

## Seventh Grade in Six-Year Course in German

### Beginning Class

*Introductory Note*

In a six-year course in German, where the aim is to give facility in the spoken as well as the written language, one may take the time to lay a careful and firm foundation. In this course the Reform-method is used and the aim obliges the teacher to use as much spoken German in every lesson as the children can understand and assimilate readily. For this reason each new word is immediately added to the speaking vocabulary. In our seventh-year class, where the children have a minimum knowledge of formal grammar, the process of giving a knowledge of and a feeling for inflectional endings in German is necessarily a very slow one. To teach the difference between subject, object, and predicate noun, or between nominative and accusative case takes a very much longer time than two or three years later when such knowledge on the part of the pupil may be taken for granted.

After the children were familiar with the nominative, genitive, and accusative cases, they were taught the use of the dative after the prepositions: *an, auf, hinter, neben, in, über, unter, vor, zwischen*. During the ten lessons preceding this, the class was drilled by means of many varied oral and written exercises, to use the dative case of possessive and demonstrative pronouns.

As a summing up of all that the class had learned regarding cases, the formal declension of nouns was taught to the pupils.

At the close of the lesson preceding this, the class collected nine familiar verbs, each of which they were told to write in a sentence beginning with " wo " for home work. Then they were ready for the lesson on accusative case as used with the above prepositions when the idea of " change of place " is involved.

In the class were seventeen boys and eleven girls who had studied German during the past four months, for four periods a week of thirty minutes each. Alge-Rippman, Deutscher, Leitfaden and the Hölzel illustrative picture of "der Frühling" were used.

. . . . . .

L: Guten Morgen, Klasse.

KL: Guten Morgen, Fräulein Haefelin.

L: Nehmt euere Papiere! Ihr habt heute Fragen geschrieben. Was ist das?

KARL: We have written questions.

L: Wie viele Fragen hast du geschrieben, Louis?

LOUIS: Ich habe neun Fragen geschrieben.

L: Und wie viele Fragen hast du geschrieben, Helen?

HELEN: Ich habe auch neun geschrieben.

L: Gut. Lies die erste Frage, Luise.

S: Wo spielen die Kinde?

L: Kind*e*? Es heisst Kind*er*. Nun die Antwort! Wo spielen die Kinder?

S: Die Kinder spielen auf der Strasse.

L: Welches Geschlecht hat "Strasse"? Geschlecht ist "gender."

S: Die Strasse ist feminine, weiblich.

L: Und wie heisst der Dativ von "die Strasse"?

S: Der Dativ heisst "der Strasse."

L: Die zweite Frage, Howard?

HOWARD: Wo singst er?

L: Sing*st*, das ist die zweite Person, Einzahl. Wie heisst die Endung fur die dritte Person? Klasse.

KL: t.

L: Also noch einmal, Margaret?

MARGARET: Wo singt er?

L: Antwort!

S: Er singt auf die Strasse.

L: Wo? Wie heisst der Dativ von "die Strasse"?

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L: Lehrerin
S: Schüler (in)
Kl: Klasse

S: Der Strasse.
L: Also, wo singt er?
S: Er singt auf der Strasse.
L: Singt er in dem Zimmer, Rudolf?
RUDOLF: Ich weiss nicht.
L: Use your imagination. Does he sing in the room?
S: Yes: Ja, er singt in dem Zimmer.
L: Gut. Wie heisst die Präposition in diesem Satze?
S: "In" ist die Präposition.
L: Und welchen Fall regiert "in"? Die ganze Klasse!
KL: "In" regiert den Dativ, wenn man "wo" fragen kann. (*The class anticipated the question,* Wann regiert "in" den Dativ?)
L: Sehr schön, und was heisst "wo," Marion?
MARION: Wo heisst "where."
L: And what else? Was noch?
S: In what place.
L: Die nächste Frage, Lambert.
LAMBERT: Wo schwimmst du?
L: Die ganze Klasse. Fragt noch einmal!
KL: Wo schwimmst du?
L: Wer kann antworten?
S: Ich schwimme in dem Wasser.
L: Gut, und was ist das? (*Pointing to the brook in the spring picture.*) Ein *neues* wort! (*It was developed in the preceding lesson.*)
S: Das ist der Bach.
L: Wo schwimmst du also, Caroline?
CAROLINE: Ich schwimme in dem Bache.
L: Die nächste Frage! Edmund.
EDMUND: Wo schwimmt—
L: Welches Verb gebrauchst du jetzt? Nicht mehr "schwimmen."
S: Wo wohnt der Onkel?
L: Gut. Wo wohnt er? Fred.
FRED: Der Onkel wohnt in dem Hause.
L: Wo wohnt der Onkel Fritz, in *diesem* Hause? (*Pointing to farmhouse in the picture.*)

S: Nein, der Onkel Fritz wohnt in der Mühle.
L: Welcher Fall ist " der Mühle?" Klasse.
KL: Der Dativ.
L: Warum ist das der Dativ? Was ist " warum?" Anna?
ANNA: Why.
L: How are you going to answer when I ask " why "?
S: Because.
L: Was ist " because "?
S: Weil.
L: Und warum steht " in der Mühle " im Dativ?
S: Weil man " wo " fragen kann.
L: Vollständing, Catherine?
CATH: In der Mühle steht in Dativ, weil man " wo " fragen kann.
L: Die nächste Frage!
S: Wo ist der Müller?
L: Die Antwort!
S: Der Müller wohnt in der Mühle.
L: Wo *ist* der Müller?
S: Der Müller ist auf dem Strasse.
L: Es heisst *die* Strasse: also?
S: Der Muller ist auf der Strasse.
L: Und wo ist der Müller nun? (*Pointing to roof in picture.*)
S: Der Müller ist auf dem Dache.
L: Und wo ist der Müller nun? (*Pointing to house.*)
S: Der Müller ist in dem Hause.
L: Und wo ist der Müller nun ? (*Pointing to bridge.*)
S: Er ist auf dem Brücke?
L: Es ist *die* Brücke. Also noch einmal!
S: Er ist auf der Brücke.
L: Frage sechs.
S: Wo singt der Knabe?
L: Antwort!
S: Der Knabe singt in dem Walde.
L: Frage sieben.
S: Wo stehen der Onkel?
L: Welche Zahl ist der Onkel?
S: Erste Zahl.

L: Es giebt zwei Zahlen-Einzahl und Mehrzahl.
S: Einzahl.
L: Wie heisst die Endung der dritten Person, Einzahl? Die ganze Klasse!
KL: t.
L: Wiederhole die Frage. Warren?
WARREN: Wo steht der Onkel?
L: Antwort!
S: Der Onkel steht auf der Strasse.
L: Welcher Fall ist " der Strasse "?
S: Dativ.
L: Warum gebrauchen wir den Dativ? Die Klasse!
KL: Weil man " wo " fragen kann.
L: Und was heisst " wo "?
S: " where " or " in what place."
L: Nun die letzte Frage! Margaret.
MARGARET: Wo arbeitet der Vater?
L: Wie heisst die Antwort? Edwin?
EDWIN: Der Vater arbeitet in die Mühle.
L: Mühle ist weiblich, es heisst *die* Mühle. Wie heisst der Dativ?
S: In der Mühle.
L: Also noch einmal!
S: Der Vater arbeitet in der Mühle.
L: Nun noch einmal, die ganze Klasse!
KL: Der Vater arbeitet in der Mühle.
L: Wie heissen die Präpositionem, die den Dativ regieren? James?
JAMES: An, auf, hinter, neben, in, über—
L: Below, Edwin?
EDWIN: Unter.
L: In front of, Rudolf?
RUDOLF: Vor.
L: Between? Stanley?
STANLEY: Zwischen.
L: Nun noch einmal! Eric.
ERIC: An, auf, hinter, in, neben, über, unter, vor, zwischen regieren den Dativ.

L: Who can illustrate the use of these prepositions? Take this piece of paper. All right, you, Margaret.

MARGARET (*Takes piece of paper and holds it* beside *the table,* on *the table,* under, *etc., using each preposition in a sentence as she does so*): Das Papier ist *an* der Tisch.

L: Es heisst *der* Tisch.

S: *An* dem Tische. Das Papier ist *auf* dem Tische. (Let me hold the paper behind the table.) Das Papier ist *hinter* dem Tische. Das Papier ist *neben* dem Tische. (*Teacher puts it in the drawer.*) Das Papier ist *in* dem Tische. Das Papier ist *über* dem Tische. Das Papier ist *unter* dem Tische. Das Papier is *vor* dem Tische.

(*Teacher holding paper between Margaret and the table, asks*): Wo ist das Papier nun? Marion?

MARION: Das Papier ist zwischen Margaret und dem Tische.

L: Make a common noun of Margaret.

MARION: Das Papier ist zwischen dem Mädchen und dem Tische.

L: Now, I'm going to teach you something new. Do you know the little poem of the old woman who sweeps the cobwebs out of the sky? All I remember of it is,

> "Whither, whither, oh whither so high?
> To sweep the cobwebs out of the sky."

That 's what the old woman replies. "*Whither* so high" what does that mean?

S: I don't know what it means.

L: Does anybody know what I mean when I say "Whither are you going?"

S: Where are you going to.

L: Yes. In the Bible we find a great many whithers. The English people used to say *whither* instead of *where.* Whither means *where, to what place,* not "wo." Now watch me carefully. (*Teacher calls attention to the place where she is standing.*) I am not going to be here in a minute.

(*Teacher walks over to door, and pointing to place she came from, asks*): Am I still there?

KL: No.

L: You 're sure I'm not? What have I done with regard to my place?

S: You have changed it.

L: Now, when the Germans want to ask *whither, to what place,* this is what they say: (*Writes* wohin *on the board.*) Who can pronounce it?

S: Wohin.

L: Noch einmal die ganze Klasse!

KL: Wohin.

L: They use " wohin " for what question? Die ganze Klasse!

KL: Where to.

L: " Wohin " may be in English three things, what are they?

S: Whither.

L: What else, Lambert?

LAMBERT: Where.

L: And " to what place." What does " wohin " mean? Noch einmal, Rodney.

RODNEY: Wohin means to what place, whither, or where.

L: And what people used to say " whither? "

S: Old English people.

L: Yes, English people, who lived quite some time ago. What must you always do when you ask the question " whither," " wohin? " (*Teacher walks from one place to another, and says, pointing to the place she has left*:) Do I stay right there?

S: No, you change your position.

L: Who can ask me in German, *Where* are you going? *Whither* are you going?

S: Wohin gehst du?

L: Die Höflichkeitsform ist, Wohin gehen Sie? Also noch einmal! Fred.

FRED: Wohin gehen Sie?

L: Now listen carefully: (*Teacher walks to window and says*): Ich gehe an *das* Fenster. What case do you use with " an "?

S: Den Dativ.

L: Listen: Ich gehe an *das* Fenster. Is that not all wrong? I told you we *always* use the *dative* case with these prepositions. Is " das Fenster " the dative case?

S: No.

L: Watch me: (*Walks to door.*) Ich gehe an *die* Türe. Welcher Fall ist das? (*Class hesitates.*) You can never use the nominative with a preposition. Welcher Fall ist "an *das* Fenster," an *die* Türe. (*Going to table.*) Iche gehe an *den* Tisch. What did I do every time?

S: You moved.

L: Yes, I moved. I changed my place or position. (*Teacher repeats each sentence, accenting* das Fenster, die Türe, den Tisch.) Which case did I use every time?

KL: "Das Fenster" ist der Akkusativ, "die Türe" ist der Akkusativ und "den Tisch" ist der Akkusativ.

L: Was what I told you all wrong? An, auf, hinter, neben, in, über, unter, vor, zwischen, stehen mit dem Dativ, wenn man "wo" fragen kann. What does "wo" mean?

S: In what place.

L: Warum stehen "das Fenster," "die Türe," "den Tisch" nicht im Dativ? Louis?

LOUIS: Man kann nicht "wo" fragen.

L: Was muss man fragen?

S: Man muss "wohin" fragen.

L: What does "wohin" mean, Klasse?

KL: To what place, whither, or where (*written on board beside* wohin).

L: And what must you do every single time you ask the question "wohin"? Did I stay in the same place always?

S: You must move, must change your position.

L: *Wo* bin ich jetzt? Caroline?

CAROLINE: Sie sind in dem Zimmer.

L: Gut. (*Teacher touches table at which she is standing.*) Aber, *wo* bin ich jetzt? In what particular place in the room? Henrietta?

S: Sie sind vor dem Tische.

L (*going to the picture*): Und *wohin* gehe ich, Marjorie?

MARJORIE: Sie gehen an das Bild.

L: Gehst du an das Bild? Catherine.

CATHERINE: Nein.

L: Go ahead. Nein, ja, is not very much German.

CATHERINE: Nein, ich gehe nicht an das Bild.

L: Gut. Und noch einmal ganz laut!

S: Nein, ich gehe nicht an das Bild.

L: Gehst du an das Bild, James.

JAMES: Nein, ich gehe nicht an das Bild.

L: Geht sie an das Bild, Stanley? (*Teacher points to Margaret.*)

STANLEY: Nein, sie geht nicht an das Bild—

L: Geht er an das Bild? (*pointing to Lambert*) Caroline?

CAROLINE: Nein, er geht nicht an das Bild.

L: Let 's have him go to the picture so that we can see that it is necessary to change one's position if we use the accusative case. (*Lambert walks to the picture while Caroline repeats:* Ja, er geht an das Bild.)

L: Gut, setze dich. Also welchen Fall gebrauchen wir nach an, auf, hinter, u.s.w., wenn man "wohin" fragen kann? Edmund.

EDMUND: Wir gebrauchen den Akkusativ.

L: Wann gebrauchen wir den Dativ? Die ganze Klasse.

KL: Wir gebrauchen den Dativ, wenn man "wo" fragen kann.

L: Und wann gebrauchen wir den Akkusativ?

S. Wir gebrauchen den Akkusativ, wenn man "wohin" fragen kann.

L: (*Teacher is standing at picture, and points to the tree, the house, the roof, the bridge, and class puts each in a sentence.*) Ich gehe. You tell me where. What am I going to do?

S. You go.

L: And besides?

S: You change your position.

L: Tell me where I am going now. (*Pointing to tree.*) Wohin gehe ich? Eric?

ERIC: Sie gehen auf den Baum.

L: Und wohin jetzt, Edmund?

EDMUND: Sie gehen auf das Haus.

L: Oder, auf das Dach. Wohin gehe ich jetzt, Edwin?

EDWIN: Sie gehen auf der Brücke.

L: How can I *go* there, and *be* there at the same time? Do you get the difference? If you say "auf der Brücke," wo bist du, that is the dative case. But I want to know where I am going to be, when I change my place. Also *wohin* gehe ich? Accusative case.

EDWIN: Sie gehen auf die Brücke.

L: Und wo ist die Tante, Edwin?

EDWIN: Die Tante, ist auf der Brücke.

L: Und wo ist der Hund? (*Pointing to street.*) Rodney?

RODNEY: Der Hund ist auf der Strasse.

L: Gut. For to-morrow you will write five questions with "wohin," and tell me why you use the accusative, not the dative, when you ask the question "wohin." Die ganze Klasse sagt mir nun den ersten und den zweiten Vers von "Schlaf, Kindlein, schlaf." The whole class repeats in chorus,

Schlaf, Kindlein, schlaf,
Der Vater hüt't die Schaf',
Die Mutter schüttelt's Bäumelein,
Da fällt herab ein Träumelein,
Schlaf, Kindlein, schlaf.

Schlaf, Kindlein, schlaf,
Am Himmel zieh'n die Schaf',
Die Sternlein sind die Lämmerlein,
Der Mond, der ist das Schäferlein,
Schlaf, Kindlein, schlaf.

L: Und nun gibt es noch einen Vers. Was ist, noch einen Vers, Helen?

HELEN: Still another stanza.

L: Die Mutter singt immer noch. She is still singing. Das Kindlein schläft noch nicht. What am I saying?

S: The little child is not asleep yet.

L: Nun kommt der Hund, Er bellt und springt. Was ist "bellen"? (*Teacher imitates barking.*) Klasse!

KL: To bark.

L: Die Mutter sagt: "Schlaf, Kindlein, schlaf." Der Hund kommt, und sie sagt, "Geh' fort und hüt' die Schaf." Was ist das?

S: Go away and watch the sheep.

L: Er geht immer noch nicht, und sie sagt. (*Speaks softly and motions to dog to go away.*) "Geh' fort." Sagt sie es laut? Karl?

KARL: Nein.

L (*Very softly*): Geh' fort, du schwarzes Hündelein. Was ist schwarz. (*Pointing to pupil's stocking and shoe.*) Der Strumpf ist schwarz, und der Schuh ist schwarz. Also, was ist, du schwarzes Hündelein?

S: You black dog. Und weck' mir nicht mein Kindelein.

L (*Speaking to a pupil, shows him by pantomime what she wants him to do.*): Schlafe. Mache die Augen zu. Jetzt wecke ich dich. (*She shakes him.*) What does it mean? Und weck' mir nicht mein Kindelein? Klasse?

KL: Do not wake up the little baby.

S: Baby is always little, just "baby."

L: See if you can say it with me. (*Teacher repeats the last stanza very slowly with the class.*)

Schlaf, Kindlein, schlaf,
Geh' fort und hüt' die Schaf',
Geh' fort, du schwarzes Hündelein,
Und weck' mir nicht mein Kindelein,
Schlaf, Kindlein, schlaf,

L: Was ist wecken?

S: To wake up.

L: For to-morrow, then, you have five questions with "wohin." Tell me why you use the accusative case, and learn the third stanza of the poem. Learn to say it so that we shall like to listen to you.

# HISTORY LESSON

## Second Year High School

*Introductory Note*

In this second-year class in the Wadleigh High School for Girls there were on the register thirty girls from fourteen to sixteen years of age. The text used was Botsford's "History of Rome." Three lessons each week for twenty weeks, averaged about ten pages each. This was the fifty-second lesson in the subject, in which pupils were getting their first impressions of a very difficult period—the founding of the Teutonic States.

. . . . . .

TEACHER: The lesson that was assigned for this morning, Miss Berger?

MISS BERGER: We had to the end of Chapter XV on the Roman Life.

TEACHER: That finishes the text. The rest of the work will be review. For the next time, next Tuesday, simply bring the text-books to the class and those outlines that we started yesterday and we will continue the outline work. Get the outlines copied in the note-books as soon as possible. All of the girls who have brought their note-book work up to date, except outline, raise their hands. (*Most of the pupils respond.*) So you are not very far behind. What is the matter, Miss Becker?

MISS BECKER: I have a few pictures to paste.

TEACHER: And you, Miss Seipp?

MISS SEIPP: I am one map behind.

TEACHER: We will have a few review questions and finish the chapter on the new German States before we start the chapter on Roman Life. Let us see what you remember about yesterday's lesson.

TEACHER: Who was the founder of the Frankish State, Miss Arnold.

MISS ARNOLD: Clovis was the founder.

TEACHER: There is a little sketch of the life of Clovis and his work.

MISS ARNOLD: He was the commander of one of the tribes of the Frankish Kingdom—

TEACHER: Was there any Frankish Kingdom at that time?

MISS ARNOLD: Frankish Nation.

TEACHER: It wasn't a nation.

MISS ARNOLD: He was the chieftain of one of the Frankish *tribes* and by his great military service in various battles that he fought in he came to be head of the other tribes; and when he got to this position he conquered the Visigoths in Southern France and the Lombards and other smaller tribes around that neighborhood. And then he had a great mind for organizing the Frankish tribes; he wanted to have them united into as large a kingdom as he possibly could, so he established it with a capital at Aix la Chapelle.

TEACHER: That will do. Does any girl wish to criticise anything Miss Arnold said.

MISS JOHNSON: I do not think that Clovis organized the city of Aix la Chapelle; I think Charlemagne did that.

TEACHER: You say "organized." He established his capital at Aix la Chapelle. Any other criticism?

MISS FRANK: I do not think that Clovis conquered the Lombards.

TEACHER: Any other German tribe or nation that he did conquer?

MISS CAHILL: Burgundians. She said that Clovis was put at the head of the army; and he put himself at the head; he conquered the other tribes.

TEACHER: I daresay it was his own military ability that accounted for his being leader of the Frankish people. What verb does Mr. Botsford use to express the work of Clovis in bringing these people together, a verb very well chosen.

MISS GAMSU: He welded them together.

TEACHER: Spell it.

PUPIL: W-e-l-d-e-d.

TEACHER: The word is well chosen. He welded the tribes together, these various people. What various people did he weld together?

MISS GAMSU: The German tribes, the Italians, the Romans and the Celts.

TEACHER: What German tribes?

MISS BECKER: The Visigoths, the Ostrogoths, the Burgundians, and the Franks?

TEACHER: What *people* did he weld together?

MISS KALBER: The Romans,, Italians, the German tribes, and the Celts.

TEACHER: Well, that might be; possibly some Italians. Don't you think that the word "weld" is a pretty good word to use? I was much impressed with that word: He *welded* them together means such a lot.

MISS LOEFFLER: In the literal sense of the word: hammered; he hammered them together.

TEACHER: What was the religion of this man Clovis and of the Franks?

MISS BAKER: Clovis was a barbarian, but he married Clotilda, a princess, who was an orthodox Christian. There were very few Germans who were of the orthodox faith; most of them were Arians; but because she was orthodox he became a Christian after he had persuaded himself that her God had made him win a battle. But he continued to be just as bad a man. His religion did not help him along any.

TEACHER: Why do we mention this if it did not help him along any?

MISS BAKER: Because he was a Christian the Romans allied themselves with him to fight against the Arians and the Pagans.

TEACHER: It helped to bring about the union of the Roman Church and the Frankish tribes. What do you mean by the Pagans?

MISS BAKER: The Pagans in the Roman Empire.

TEACHER: It was one of the means of bringing the church into closer relations with the Franks. When you say "the church" what church?

MISS BAKER: The orthodox church.

TEACHER: Into closer relation with the Frankish people. He did it probably from a very selfish motive; nevertheless it was an advance. He brought his people to realize something at least of the virtues of Christianity—a very crude kind of Christianity probably. You have heard enough so that you can say something on the subject of the influence of women in early Christianity.

MISS JOHNSON: They said that if a woman was converted to Christianity, then they could get the man or the leader of a tribe to be converted; and so they generally tried to get the women converted first.

TEACHER: What do you mean by "they"?

MISS JOHNSON: The people, the church and the missionaries.

TEACHER: The missionaries often worked among the women; and here is an example. They thought that if they could convert the wife of the chieftain that she might influence the chieftain, and that in turn he would influence his soldiers. That was one of the ways the missionaries worked among these Germans. We ought to remember that there are several other examples in history; but here is a definite one: one you can keep with you. Someone said Clovis became a Christian because the God of his wife had helped him to win a battle. Who remembers what that battle was?

MISS REFFES: Soissons.

TEACHER: It was one of the battles by which he helped to create the Frankish State out of these various materials that he had there. Another battle fought very near Soissons that you are very apt to confuse with it—these two happen to sound more or less alike—is the Battle of Chalons. What do you remember about that?

MISS SHERMAN: In that battle Attila was defeated by a German chief and another Roman general; and this battle had a very great effect on European civilization because it saved Europe from the influence of Asia.

TEACHER: Probably.

PUPIL (*continuing*): Otherwise the people would have become mere Barbarians again.

TEACHER: At least they would have been very much dominated by the Asiatic influence and from our point of view the Asiatic influence would not have been as good for the civilization of Europe as the Roman and the German influence. These civilizations were helping to make the new states that were being carved out of the chaotic conditions that we have been talking about. What was the line of kings founded by Clovis?

MISS RICHARD: Merovingian. Merowig was the grandfather of Clovis and they took that name for the Dynasty.

TEACHER: What can you say of the later Merovingian rulers?

MISS RICHARD: They took the same plan that Clovis did; but they were not as strong in performing the same things that Clovis was; and later they became so weak that they were overthrown by one of the Mayors who was the Secretary of the King and who usurped the throne.

TEACHER: Called "the Mayor of the Palace"—if not secretary, perhaps steward. Does any girl wish to criticise any part of that?

MISS FRANK: I do not think the first Mayor did that. He just commanded the armies, and his son usurped the throne.

TEACHER: What Mayor have you in mind now, when you speak of the "first Mayor."

MISS FRANK: Mayor Charles. He was the Mayor who commanded the armies.

TEACHER: For the eastern branch of the Frankish people, and being an able man and the King being perhaps half imbecile, he took advantage of his opportunity and practically became ruler; he didn't become King in name, but practically was King; and that, of course, accounts for a new dynasty. In other words: the Merovingian Kings seem to run out, exhausted themselves. Some of them were weak-minded and not many of them were able; and in time a new dynasty came. What was the new dynasty called?

PUPIL: Carolingian and the greatest of them all was Charlemagne.

TEACHER: We have to work up to Charlemagne and find out something about the great struggle that that line of rulers had.

MISS CAHILL: They had to struggle with the Saxons.

TEACHER: Yes. Any other, perhaps a greater struggle?

PUPIL: The Lombards.

TEACHER: Yes. Any other?

MISS BARZILAY: The Mohammedans from the East.

TEACHER: Who were they; what do you know about them?

MISS LAVINE: They were a band founded by Mohammed, who was the man from Mecca farther in the East; and he founded a new religion called the Mohammedan religion; and he said it was glory to die in battle and thought that any one who died by the sword would be greater than any one else and would probably go to the heaven that they imagined. The Mohammedans were very zealous and they conquered a great deal of the land around the Mediterranean Sea and on the Eastern border of the Mediterranean; and they tried to conquer the Roman Empire in the west—

TEACHER: Would you say "Roman"?

MISS SEIPP: It was more a German Empire.

TEACHER: Did they really try to conquer Rome; did they approach the city?

MISS SEIPP: No. When they invaded the Western World, the western part of the Roman Empire, it was thought at the time that they would probably conquer it, but Charles Martel with his soldiers, the German soldiers, came and defeated them.

TEACHER: Defeated whom?

PUPIL: The Mohammedans.

TEACHER: Did they defeat Mohammed?

PUPIL: No, because he was not in that battle.

TEACHER: Where was he?

PUPIL: He was dead.

TEACHER: Mohammed had passed away but his followers were still conquering in his name.

PUPIL: After that the Mohammedans did not have as much power as before. They tried to invade other countries.

TEACHER: Does any girl know anything about this man Mohammed?

MISS BECKER: He was an Arabian; he was born at Mecca.

TEACHER: Come and find Mecca on the map. (*Pupil indicates.*) Yes; down there on the West coast of Arabia—a little

lower down than you pointed. An Arabian who became possessed with the idea of founding a new religion, a merchant himself, the husband of a woman who was interested in merchandise and in caravans; and he traveled far and near as a merchant would, up and down the coast of the Mediterranean and the Red Sea. And there he became very much impressed with the idea of one God. Perhaps he learned it from the Jews, because the Arabians did not really believe in one God. Their religion was a polytheistic system, attempting to explain some of the mysteries of Nature. But in some way he became impressed with the idea of one God, the same as the Jews understood when they said Jehovah. And he became so impressed with that, that he began to teach that idea to his family. Perhaps his wife was the first convert. We are not quite sure. But anyway in the course of time he had a few followers; and after his death many people flocked to this belief, became convinced that there was some truth in it at least. Then they soon began to conquer in the name of what?

PUPIL: In the name of Mohammed.

TEACHER: In the name of Mohammed and his teaching: in the name of their religion. Probably love of plunder had something to do with it and the love of gain; but at the base of it all—conquering in the name of this new religion called Mohammedanism. They soon entered most of the cities along the northern coast of Africa, and made their way to the Strait of Gibraltar. This takes me five minutes to tell. How long do you think it took them to do this?

PUPIL: A century or two.

TEACHER: We pass quickly over these periods. You girls might get confused and think this happened in a few years. Mohammed was dead a long time before they attempted to cross into Europe. Now where did they attempt to cross into Europe?

PUPIL: The Straits of Gibraltar.

TEACHER: What people would they have to conquer in Southern Spain before they could go very far?

MISS ARNOLD: The Visigoths.

TEACHER: You remember some days ago we talked about the Visigothic State, the first German State to be carved out of these

chaotic conditions. Later this German State was attacked on the South by whom?

PUPIL: By the Saracens, or Mohammedans.

TEACHER: We have come to them again; these followers of Mohammed. The Visigoths had already been attacked on the North by whom?

PUPIL: The Franks.

TEACHER: The Visigothic State going to pieces, as it were, under the attacks of the Franks from the North and the Saracens from the South. The Saracens slowly pushed their way, up through Spain into France, threatening Christendom. If they could spread their religion over Europe what other religion must give place to it?

PUPIL: Christianity.

TEACHER: There must have been great concern among the Christians when they realized what was coming, what the dangers were. Who was strong enough to turn them back?

PUPIL: Charles Martel.

TEACHER: The Frankish soldiers and Charles Martel. Where was that great and decisive battle fought when they succeeded in turning back the Mohammedans and probably saved Europe?

MISS FRANK: Poitiers.

TEACHER: Sometimes called the Battle of Tours. Where is it? (*Pupil indicates on map.*) You might say near the centre of France. Can you tell me why we look upon the battle of Poitiers as one of the great and decisive battles of the world, why we should remember it, Miss Kane?

MISS KANE: At the Battle of Poitiers Charles Martel defeated the Saracens, the Mohammedans; and if he had not defeated them the religion of the Germans would have been changed from Christian to Mohammedan because they were very strong, and they would have forced their religion upon the Romans and the Christians, but since Charles Martel defeated them Christianity was spared and the people remained just the way they had been before.

TEACHER: That is pretty strong. People never remain just as they have been before. Christianity was saved and probably we may say Europe was saved from Mohammedanism. Now,

was that something to be desired, that Europe should be saved from Mohammedanism?

PUPIL: Yes.

TEACHER: Why do you say that? Mohammed taught the belief in one God; he taught many good things. By the way, what was the Bible of the Mohammedans called?

MISS WEISS: The Koran.

TEACHER: It is full of fine teachings, many of them as fine as you can find in your Bible. Why do we say it was a good thing for the world?

MISS BERGER: The greater part of them were plunderers and they ravaged—

TEACHER: So did the Germans. Go on with your answer, Miss Arnold.

MISS ARNOLD: They thought it was a glory to be killed, it was considered good to be killed in battle and this was carried to such an extent that it became cruel—

TEACHER: Do you think the Germans were very mild or gentle? Why do we think that this Battle of Poitiers was such a great benefit; why was the saving of Christianity to the world better than if the world had been converted to Mohammedanism.

MISS ARNOLD: Christianity teaches that no blood should be shed; but Mohammed taught that it is well that you should die by the sword in battle.

TEACHER: This ideal of Christianity was finer than the ideal of the Mohammedans? Yes. We are getting at it, I think. Miss Frank, another reason.

MISS FRANK: The Mohammedans were not as civilized as the Christians were.

TEACHER: I do not know about that. They had better schools than the Christians had in those times. It is said that there were better schools among the Mohammedans: science was more advanced among the Mohammedans. What do you say now?

MISS FRANK: We can take those countries today and we can see they are not nearly as civilized as we are; and if they had substituted their religion likely Europe would be just the same.

TEACHER: Where do we find those people today?

MISS FRANK: Arabia and Turkey.

TEACHER: Their civilization today we think is far inferior to ours. Now when you compare the civilization that has developed under the teachings of Mohammed with the civilization that has developed under the teachings of Christianity, which do you think is very much better?

CLASS: Christian civilization.

TEACHER: When the two are measured side by side we feel that the ideals of the Christians are finer than the ideals taught by the Mohammedans; and the two civilizations of today are the very best proof that we have. I think that is the way to get at that. Who was the greatest of all the Carolingians?

MISS BARZILAY: Charles the Great.

TEACHER: Describe him.

MISS BARZILAY: He was about six feet high and he had a brilliant countenance and big eyes and blonde hair, just like the Germans have; and he had great genius for organization and he organized an army. He conquered the Angles and the Saxons after thirty years' war—

TEACHER: I am not sure about the Angles, but the Saxons.

MISS BARZILAY: —the Saxons after thirty years' war and then they decided to accept his rule and Christianity. And after that he went into Spain; but his campaign there proved a failure. And then he conquered the Lombards.

TEACHER: Who were the Lombards?

MISS DEUTSCH: They were a German tribe who lived around in the Po Valley.

TEACHER: How did it happen that he came into conflict with the Lombards, do you remember?

MISS DEUTSCH: He was crossing the Alps on his way from Spain and he came in contact with the Lombards.

TEACHER: Was it accidental?

MISS DEUTSCH: Oh, no. I think the Pope asked him to help him fight against them.

TEACHER: Why?

MISS BERGER: Because they were disturbing the people in Italy, in Northern Italy.

TEACHER: They were the people of Northern Italy very largely, the Lombards. How many would believe that he was perhaps invited to come down into Italy by the Pope?

MISS ARNOLD: Yes.

TEACHER: Why?

MISS JOHNSON: Because the Pope thought that all the power that was given to him when the Patrimony was given to him—

TEACHER: What do you mean by that?

MISS JOHNSON: He was given some estates, the Patrimony of St. Peter, and he was afraid the Lombards would take them away.

TEACHER: How did it happen that the Pope had estates given him, these estates called the Patrimony of St. Peter?

MISS ARNOLD: If a rich man died he left his estate to the Pope and he had charge of it. When the Mayors conquered land they perhaps gave it to him. Charlemagne was the ruler of the Western Empire.

TEACHER: Power and estates given him in different ways. The Pope evidently at this time maintained an army of his own. Sometimes he annexed territory by force of arms. This Patrimony of St. Peter, where was it?

MISS HAWLEY: Ravenna.

TEACHER: Ravenna was a city. Do you understand that it was just a city, Miss Donahue?

MISS DONAHUE: I think it was parts of land all over the Empire.

TEACHER: Just here and there—little farms here and there? Has any girl a different idea?

MISS RICHARD: In Italy and Sicily, wasn't the land that was given?

TEACHER: Largely in the central part of Italy, the Patrimony of St. Peter. Let us come back to this Lombard story. Tell me how it was that Charlemagne happened to go down into Italy to defend the Pope, Miss Deutsch.

MISS DEUTSCH: The Lombards first had been invited into Italy by Narces. They had their tribes divided into Duchies. They were distributed all through Italy and attacked these estates.

TEACHER: No; I do not think that is true. Where do we find the Duchies?

MISS DEUTSCH: Around the northern part of Italy.

TEACHER: Attacked what estates?

MISS DEUTSCH: The Roman estates.

TEACHER: That is very vague.

MISS DEUTSCH: The Patrimony of St. Peter: these estates that belonged to the Bishop of Rome. So he called upon Charles the Great to come down and defend them.

TEACHER: Why did he call upon Charles?

MISS DEUTSCH: Because he had called once before upon one of the Mayors, Charles Martel, and he was successful, so he called upon another Charles.

TEACHER: Another reason.

MISS BAKER: There existed a great friendliness between the Pope and the Mayors; and whenever they wanted to drive the Lombards out—whenever the Pope wanted to—he sent for these Frankish rulers.

TEACHER: Why was there a great friendliness?

MISS WEISS: The Pope had gone up there and converted them to Christianity.

TEACHER: The Pope had?

PUPIL: His missionaries.

TEACHER: Suppose you straighten that out.

MISS WEISS: The Popes of Rome had sent missionaries up into Germany among the Franks to convert them to Christianity

TEACHER: They accepted what Christianity?

MISS BERGER: Orthodox Christianity. And so there was a bond of religion between them.

TEACHER: A story we had this morning illustrates it: Clovis's wife, Clotilda, was a Christian of the orthodox church; she converted her husband. So it had gone on for many years, this friendly relation between the orthodox Christians and the Bishops at Rome. Whenever the Pope was in trouble he was apt to call upon his friends the Frankish kings or rulers. The Lombards were of what faith?

PUPIL: Arian.

TEACHER: That was another cause for disagreement between

the Lombards and the Pope or Bishop of Rome. What did this finally lead to, this friendly relation which existed for so many years between the Church at Rome and the Franks, Miss Ritchie?

MISS RITCHIE: Charles the Great on Christmas Day, 800 A. D., was crowned with the Lombard Crown by the Pope; and that crown was supposed to be made out of the true Cross—

TEACHER: Crowned where?

MISS RITCHIE: In the church while he was praying.

TEACHER: There were a great many churches.

MISS RITCHIE: The Church of St. Peter at Rome.

TEACHER: Tell the story again—what this friendly relation finally led to.

MISS RITCHIE: The Pope crowned Charles the Great with the Lombard crown in the Church of St. Peter at Rome on Christmas Day 800 A. D.

TEACHER: Now we have the main facts in the story. There is a great deal more to it. But keep that in your minds: He was crowned on Christmas Day 800 A. D. in Rome. What title did he receive?

MISS BARDSLEY: He was made Emperor of the Romans.

TEACHER: And what about the Eastern Roman Empire?

MISS BARDSLEY: The Eastern Empire was really supposed to be under him too; but the people of the Eastern Empire had their own Emperor.

TEACHER: Where?

MISS BARDSLEY: At Constantinople, and they didn't pay any attention to the one in the West. So there were two Emperors.

TEACHER: Two empires and two Emperors?

MISS BARDSLEY: The Emperor in the East claimed as well to be Emperor of the old Roman Empire.

TEACHER: From that time on we have a great number of Carolingan Kings, but the greatest of them all was Charles the Great. It is a long hard story to get through with for the first time; and we have not time today for that story of the life of the Romans. We will have to bring that in some other time; the story of their weddings, their schools, their home life, the position of the women, and all those interesting things that we have touched upon at various times. We will take them up in another lesson.

# STUDIES IN
# EDUCATIONAL ADMINISTRATION

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